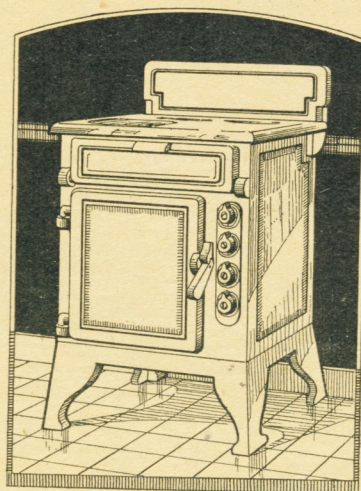
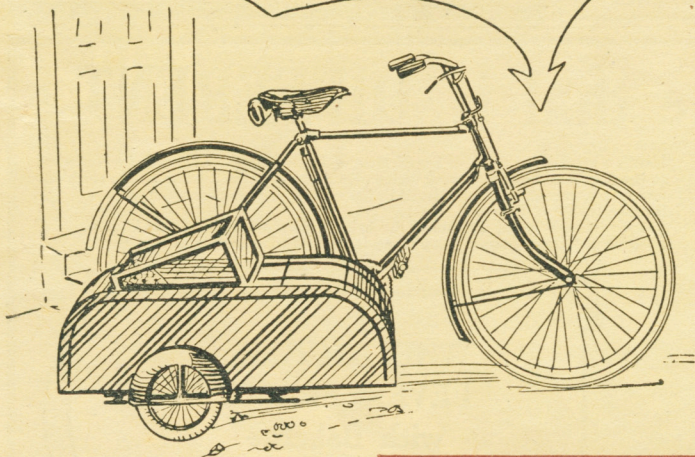


Hobbies

WEEKLY

CHILD'S
BICYCLE
SIDE-CAR



DOLL'S
ELECTRIC
COOKER

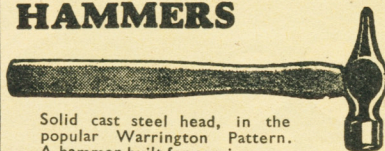
May 14th. 1938

2^D

Vol 86. No. 2221

THE FRETWORKER'S AND
HOME CRAFTSMAN'S JOURNAL

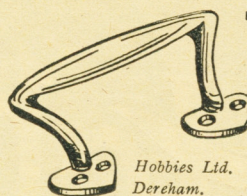
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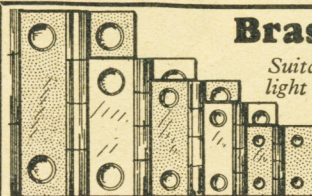
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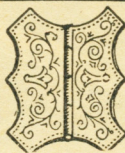


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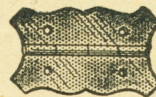
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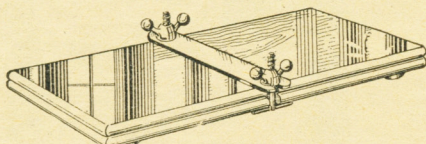
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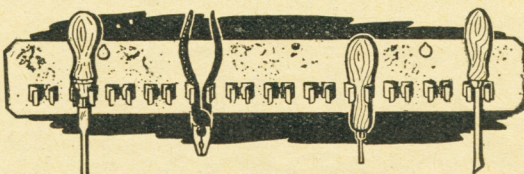
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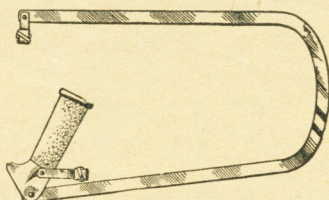
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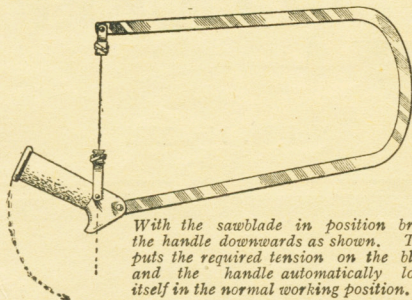
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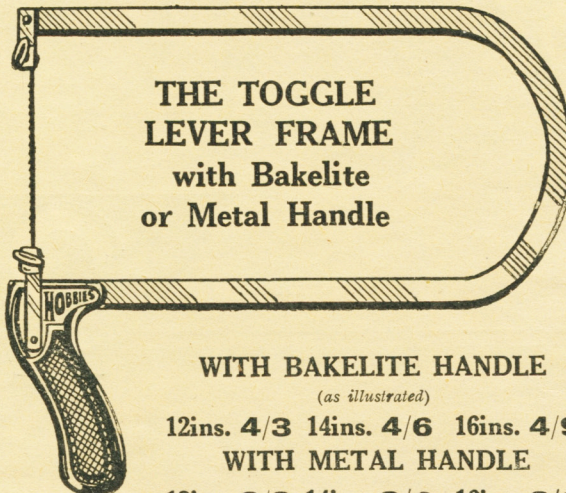


The frame is sent out like this. First turn the handle out of the way and insert the sawblade in top and bottom clamps.



With the sawblade in position bring the handle downwards as shown. This puts the required tension on the blade and the handle automatically locks itself in the normal working position.

Here's a good idea. A lever handframe without a lever ! The handle is pivoted to the frame and forms a lever which effectively puts the tension on the sawblade and then automatically locks itself in the normal position for working. Simple, isn't it ? Practical, too ! Choose either a metal handle or the bakelite handle with its pistol-like grip. If possible buy the bakelite. You'll say it's the best frame you've ever used.



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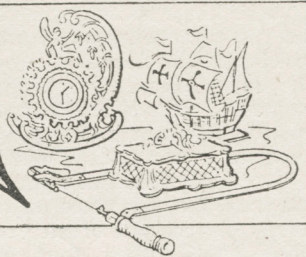
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Hobbies

WEEKLY



May 14th. 1938

Vol. 86. No. 2221

DOLL'S ELECTRIC COOKER

WE show here the picture of another of the completed models making up the set of the doll's house kitchen. We have already published patterns for making a sink and ironing board, and later will give particulars of a dresser, washer, table and complete layout for kitchen.

This week we have the details and patterns of the electric Cooker, and as can be seen by the illustration herewith it is a very realistic piece of work. It is cut from a few odd pieces of wood, and to save trouble a complete parcel is provided.

Complete Dimensions

The whole of the patterns, too, are shown on the centre pages of this week's issue, and when built the model stands 8ins. high on a base just $4\frac{1}{2}$ ins. wide and $3\frac{1}{2}$ ins. from back to front. The little model will be a delight to any worker. The parts can be easily cut with the fretsaw then the whole thing is finished off with some Cruse enamel.

Apart from the cutting there is a certain amount of shaping to be done, but no other material is required beyond the wood for the various parts. The hinging, catches, etc., are all cut out in an ingenious manner from the wood, and the various details shown with the patterns illustrate quite clearly how the parts are built up.

First of all make a complete study of the various patterns and these details mentioned, to see you have a good idea of how the thing is completed. Most of the parts are in $\frac{3}{16}$ in. wood and some of them are quite tiny so must be held and shaped very carefully. Plywood is the most suitable material because in the tiny parts this is less liable to break off.

Cut the paper patterns from the centre pages and paste them down to the wood, and notice in the case of the shelf that the two parts have to be extended to a length of $4\frac{1}{2}$ ins.

First Construction

There is no need, however, to paste this part down at all if you mark a rectangle of wood $4\frac{1}{2}$ ins. long, $2\frac{1}{2}$ ins. wide, then mark off the position of the shelf $1\frac{1}{2}$ ins. from one end. The main body of the Cooker is built of a box frame, and can be glued round the floor and the shelf with the top above all of it.

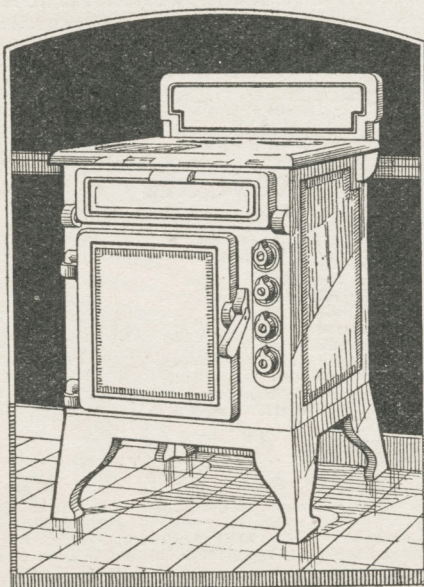
Indeed, a useful method of construction is to use the top temporarily as the base building up the other pieces on top of it. The two sides go between the front and the back, and whilst they can be temporarily fitted in position, they should not be finally fixed until the other details on the front have been added.

In this connection the actual front and back are shown as one pattern. The back is a solid piece, and it is only the front which has the two openings shown cut therefrom. The upper opening forms an elongated door, whilst the ordinary one is formed by the panel below.

Two Doors

These two openings in the front are covered by the upper and Cooker door, both cut to the sizes shown and with their edges shaped rounded to the section.

The Cooker door has a projecting piece which is made to form the hinge, and the manner of doing this is shown by the detail on the left of the patterns. The projecting piece is cut, then a little pin portion shaped round to form a hinge portion



to drop into the socket glued to the main front itself.

These hinge sockets are the pieces A and are glued in place when you have actually tested the position of the door in the opening on the front. The upper long door is hinged in a very similar way, and here two details show how the projecting square portion at each end is rounded off at one corner to form a suitable pin to fit the socket.

Two sockets for this upper door are lettered B, and they, too, are glued on best with the door in place. By the side of the Cooker door comes the switch panel with its four circular switches.

The Switch Panel

A good plan is to stick down the actual pattern to use it in the finished article. Or, of course, you can put it on a separate piece of very thin wood and cut out the centre circles to allow for the switches themselves.

Four tiny switches are cut, and can then be screwed in the holes provided sufficiently loose to make them turnable. Or, of course, you can just glue the switches in place with all the little projections pointing upwards. Handles are provided to the two doors by two different methods, and the details on the sheet show each quite clearly. The handle on the upper door is merely a shaped piece of 3/16in. strip 3/4ins. long. It is rounded off and glued in place with the flat edge underneath.

The Wooden Catch

A novel form of catch is provided for the Cooker door handle which opens and closes correctly as shown. The top of the whole thing projects beyond the main body, and the edges of this portion should be rounded off as shown by the sectional detail.

Behind this top comes the splash back. It is made to pivot by two hinged pieces. These hinges fit into the angle of the top, and are glued and nailed just on the outside of the sides. The splash back itself is then fitted between these two upright pieces by means of a pin or short nail driven in through the end as shown, and is prevented from falling backwards by the little projecting piece at the top of the end catches.

The whole model is stood upon four feet which are actually cut out from the two patterns shown. In order to obtain the "splay" effect it will be necessary to chamfer the top edge of each.

This can be done when the whole thing is put together. Cut the parts out to the pattern shown, then glue the two side legs between the front and back. Now lay the whole thing down on a piece of fairly coarse glasspaper, and with an even circular motion

gradually level the top of the wood to a flat surface all round.

You may find it necessary to add little blocking pieces inside the legs to make a good joint, and take care not to rub too hard on the glasspaper. If you do, an uneven chamfer will be obtained, and you will not get the body of the Cooker to bed down properly on to what should be the pot flat surface of the leg portion.

The whole of the work of cutting is now complete,

MATERIAL SUPPLIED

For making this model we supply a parcel of beech for all parts. Price 1/4 or sent post free for 1/6.

but the actual beauty of the model is very largely made by the painted effect.

These Cookers are usually given a mottled effect of blue or grey, and a good plan is to obtain a colour picture of one of them from any local electric supply or service people. The whole model is painted with white enamel, taking care to see that it does not set in the hinged portions and so prevent the doors, etc., being opened.

How to Colour

Before the white enamel has finally set, however, splash on a light blue or grey, streaking it into the white in order to get the mottled effect desired.

A good plan is to try this out first on a piece of waste wood to ensure you can get what you want. Remember there are complete panels of white on the sides, doors and splash back, and these must be left without any mottling. The edge of the white panels is afterwards treated when the enamel is hard to a line in black which can be drawn on in indian ink or in black paint.

Do not forget to paint the underside of the model, and also to line up the top two circles and rectangle to indicate the hot plates. These three pieces should be in solid black, whilst the switches can also be ornamented with small black centres on a white background.

The small tins of Crusoe enamel are quite suitable for this painting, and the scheme should be followed right through the whole of the kitchen.

When the series is finished we shall have a complete doll's kitchen, so it is worth while paying a little attention to get the whole of the contents alike.

As each article comes along we shall give particulars for painting, and those who have not made up the two earlier ones can still get back copies for 3d. each post free on request to Hobbies Ltd., Dereham.

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Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc., are on cover iii.

A CHILD'S SIDECAR

for a BICYCLE

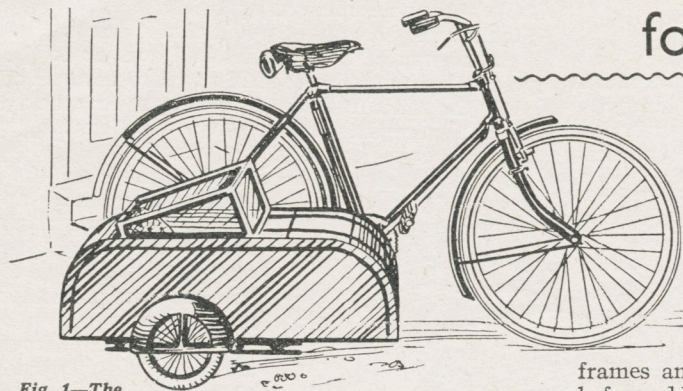


Fig. 1—The car in place

EVERY year the pedal-cycle sidecar becomes more popular, so this week, at the request of many of our readers, we give full particulars for making one up.

It is suitable for carrying a child up to about five years of age, is sturdily built yet simple of construction and inexpensive. A handy luggage space is provided at the back and provision is made for wet weather by a folding hood to fit over the windscreen.

We recommend that a chassis be bought from one of the many firms that specialise in these. There are on the market nowadays quite a number of inexpensive types that are not only safer and more reliable than could be constructed at home, but also include certain patent features such as "banking" arrangements and wheel aligning mechanism that are a great help towards easy riding and the comfort of the little passenger.

A Suitable Chassis

Should any difficulty be experienced in securing a chassis, however, the Editor will be pleased to put you in touch with one of the leading firms of manufacturers.

We feel sure, however, there are a good number of our readers, too, who will be tempted to use the idea not only for carrying a child, but for other purposes, such as carrying camp equipment. So for their benefit, we give details of how a simple chassis may be constructed at small expense, on which any type of box or platform may

be fixed to suit the reader's particular requirements.

It will be seen that the framework of the sidecar is made up of $\frac{1}{2}$ in. square stuff, with the sides of $\frac{3}{8}$ in. plywood and the curved ends of $\frac{1}{4}$ in. stuff. No door has been included, since it is nowadays considered safer and more convenient to lift the child in and out as required.

Make up the top and the bottom frames and screw them to one of the sides. But before adding the other side, fix on the bottom and then build in the seat and the foot rest. Now add the second side and by its curved edges, you will see just how to put in the remaining cross-stays.

With all the cross-stays in position, we are ready for adding the curved front and back. It will be seen that the front is not all of it curved, but finishes up at the top with $\frac{1}{2}$ in. of straight, leading up to where the windscreen will be.

Before adding the curved back, cut out the piece that will form the luggage compartment door, as shown at letter "B." This latter piece can then be strengthened with $\frac{1}{2}$ in. stuff round its four edges, and then hinged into its proper position again.

The Windscreen

The two front uprights of the screen are cut from $\frac{1}{2}$ in. by $\frac{1}{2}$ in. stuff and the tops and back uprights from pieces of $\frac{1}{2}$ in. by $\frac{1}{2}$ in. thickness. Letter "C" shows how these are fixed in place, with three sheets of celluloid glued on as indicated.

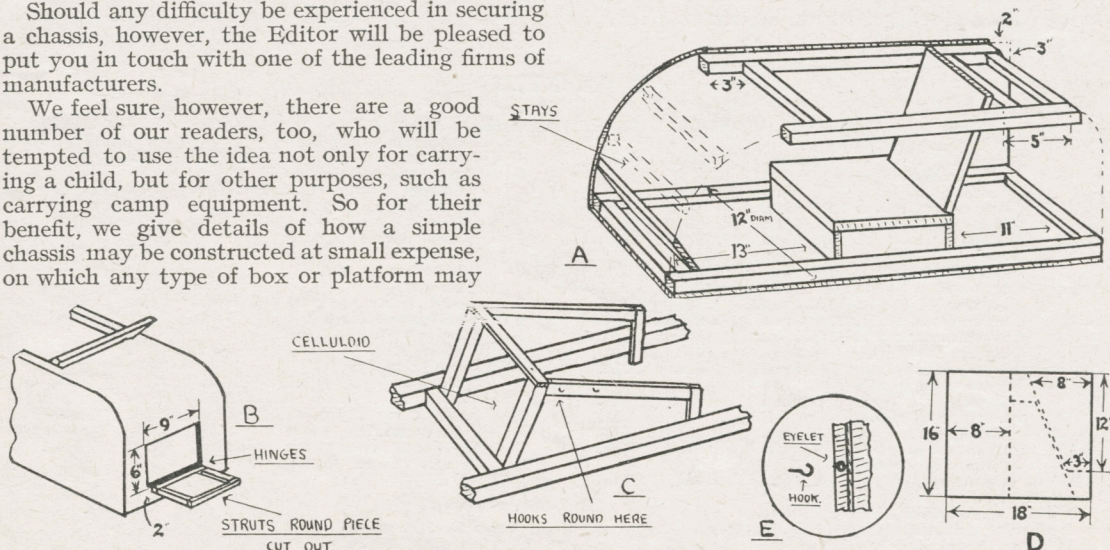


Fig. 2—Sidecar details with the bodywork (A). Back luggage compartment (B). Windscreen frame (C). The celluloid shape (D) and fixing the hood (E)

Your local cycle dealer will no doubt be able to supply this latter, cut to the sizes required. But if not a note to the Editor will bring you the address of a suitable firm.

The Hood

Procure a piece of black American Cloth 18ins. by 16ins. and fix eyelets in it at frequent intervals round the edges. Now if you place small hooks round the outer edges of the windscreen, this

The firm supplying the chassis will be sure to give full instructions for fixing it to the cycle or tandem and how to bolt the sidecar to their chassis. These should be followed explicitly.

Incidentally it may be noted that special makes of chassis can be bought that fold over on to the cycle. One of these, together with a method of fixing the sidecar that allows it to be quickly removed from the chassis, solves the "housing" problem very effectively.

Now for a simple chassis that the home constructor may build up himself and on which he can build any type of "goods" carriage to suit his own particular needs.

With the exception of a plate of 8ins. by 6ins. that holds the chassis to the cycle, all the remainder of it can be made up from strips of 1in. by $\frac{1}{4}$ in. mild steel, with angle pieces of the same material (see letter J) used to bolt the various pieces together. Particulars of all these pieces are given in the cutting list, and the only other requirements are a 14in. by 2in. wheel, eight 3in. coiled springs, and various nuts and bolts.

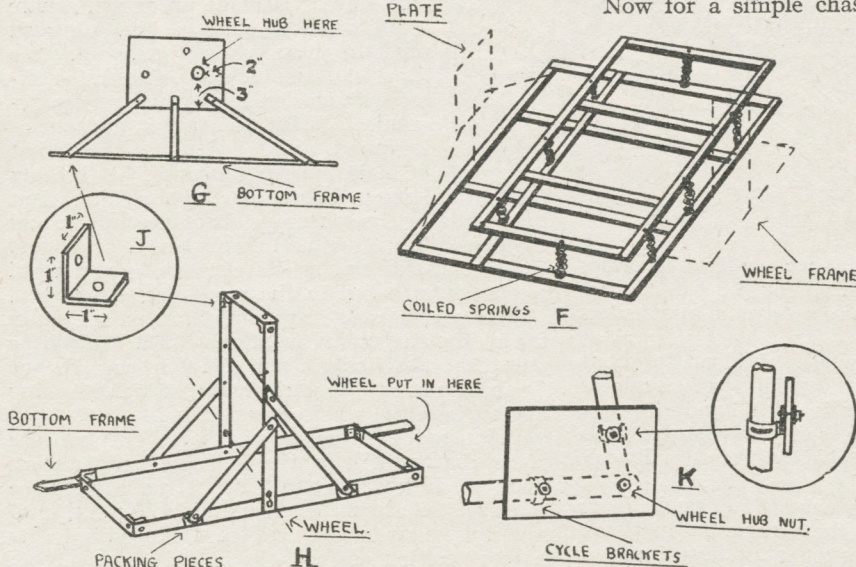


Fig. 3—The chassis with the two frames (F). Plate strips (G). Wheel frame (H). A corner piece (J) and how to fix to cycle at (K).

roof may be hooked on as required. (See letter "E.") It can be stowed away in the luggage carrier when not required.

Black enamel, or stain and varnish, with perhaps a lining of red or green, is as serviceable a finish as any. In use a couple of cushions fixed to the seat and the back rest will greatly add to the comfort.

First make up the two frames, and bolt them together with the eight coiled springs in between them as shown at letter "F." It will be seen that the bottom one of these two frames is joined to the plate by three strips, as shown at letter "G."

Make up the wheel frame as shown at letter

CUTTING LIST

Sidecar.— Pieces.	Description.	Length.	Width.	Thick.	Chassis.— Pieces	Description.	Length.	Width.	Thick.
2	Bottom corners of frame	3ft. 0ins.	1in.	1in.	5	Length pieces for both frames	2ft. 0ins.	1in.	$\frac{1}{4}$ in.
2	Top corners of frame	2ft. 0ins.	1in.	1in.	4	Cross pieces for bottom frame	1ft. 8ins.	1in.	$\frac{1}{4}$ in.
8	Cross stays	1ft. 6ins.	1in.	1in.	4	Cross pieces for top frame	1ft. 2ins.	1in.	$\frac{1}{4}$ in.
2	Sides	3ft. 0ins.	1ft. 0ins.	$\frac{1}{4}$ in.	1	Wheel frame length piece	1ft. 4ins.	1in.	$\frac{1}{4}$ in.
1	Bottom	3ft. 0ins.	1ft. 6 $\frac{1}{2}$ ins.	$\frac{1}{4}$ in.	2	Wheel frame end pieces	4ins.	1in.	$\frac{1}{4}$ in.
1	Seat	1ft. 4ins.	10ins.	1in.	2	Wheel frame uprights	10ins.	1in.	$\frac{1}{4}$ in.
2	Seat supports	1ft. 4ins.	3in.	1in.	4	Wheel frame stays	7ins.	1in.	$\frac{1}{4}$ in.
1	Seat back	1ft. 4ins.	10ins.	1in.	1	Wheel frame top piece	5ins.	1in.	$\frac{1}{4}$ in.
1	Foot rest	1ft. 4ins.	5ins.	1in.	4	Packing pieces for stays	1in.	1in.	$\frac{1}{4}$ in.
1	Curved front	1ft. 8ins.	1ft. 6 $\frac{1}{2}$ ins.	$\frac{1}{4}$ in.	1	Plate	8ins.	6ins.	$\frac{1}{4}$ in.
1	Curved back	1ft. 3 $\frac{1}{2}$ ins.	1ft. 6 $\frac{1}{2}$ ins.	$\frac{1}{4}$ in.	1	Plate connecting piece	5ins.	1in.	$\frac{1}{4}$ in.
2	Luggage door struts	9ins.	1in.	1in.	1	Plate connecting piece	8ins.	1in.	$\frac{1}{4}$ in.
2	Luggage door struts	4ins.	1in.	1in.	1	Plate connecting piece	11ins.	1in.	$\frac{1}{4}$ in.
2	Screen uprights (front)	9ins.	1in.	1in.	9	Return pieces (letter "J")	2ins.	1in.	$\frac{1}{4}$ in.
2	Screen uprights (back)	4ins.	1in.	$\frac{1}{4}$ in.					
1	Screen cross piece	1ft. 4ins.	1in.	$\frac{1}{4}$ in.					
2	Screen top pieces (slanting)	1ft. 1in.	1in.	$\frac{1}{4}$ in.					

Also required:—

- 1 piece of celluloid 18ins. by 16ins.
- 1 piece of American cloth 18ins. by 16ins.
- 16 screw hooks and brass eyelets.
- 1 pair hinges and 1 fastener for luggage compartment door.

Also required:—

- 1 14in. by 2in. wheel.
- 2 cycle frame brackets.
- 8 3in. coil springs with bolts, and various short bolts, with washers.

"H," but leave one of the ends open. Bolt this to the bottom frame too, as shown and then put the wheel in its place and bolt on the remaining end.

Give the steel parts a coat of some quick-drying enamel, as a precaution against rust.

Fixing the Cycle

The chassis is fixed to the cycle by means of the 8in. by 6in. plate. Take off the left nut on the hub

of the cycle wheel and put the plate behind it. It is held also by two cycle brackets, which are bolted both to the cycle frame and to the plate, as shown at letter "K."

Take care to get the cycle wheel and the chassis wheel parallel, or undue wearing of the latter's tyre may result.

Any box or platform can then be bolted to the top frame of the chassis, as required.



IF you like pigeons as pets, you can keep fantails for their curious strutting actions, in the yard or garden, or pouters with immense throats, or Jacobeans and "swallows" with funny feathered legs, or tumblers that turn over and over in the air, somersaulting downwards, or the big dragons. Well, whatever sorts you have, here are a few hints on keeping them.

You can keep the birds in lofts with mesh wire or wooden-bar fronts, or large, roomy aviaries consisting of a brick wall on the windward side and the rest mesh wire.

Away from Vermin

If you use wooden dove cotes on the tops of posts, they will be less troubled with rats and mice. An old attic or box-room can be converted to a pigeon loft and if kept clean will not affect the rest of the house, unless the birds coo too much!

Take great care to make your loft or cote free from draughts and damp in every way. No waste food should be left about or littering the ground below, and mice and rats must be trapped. Put the traps safely in during the dark, placing under inverted tubs, etc., with just a big enough entrance for the rodents. Do not bait with grain but something different, like fish.

Your loft will need some roosting perches, and an outdoor aviary some wooden roosting boxes.

Cover the floor of the loft with sand or sawdust and clean it out every other day—the sand from cleaning makes good garden manure. A loose, wooden swing door allows homers to enter but none to leave until you open the loft.

Suitable Food

As well as feeding your pigeons on maize and lentils, split peas and lawn mowings, they will require a box of grit, like finely crushed flints, red sand, mortar, salt and ground oyster-shell.

Nest boxes should be about 2½ feet by 1½ feet, along the warm sides, but as pigeons are liable to mate and nest every month of the year, it is not well to let them breed too often, or your lofts will become crowded with inferior weak birds.

Spring is the best time for mating, when the nest-boxes can be inserted and the sexes allowed together. Otherwise it is best to separate birds when mating is not wanted, and to pair the best birds by shutting them up together in a side loft.

Mating

Never mate brother and sister or very young birds and fit each young pigeon with a numbered leg ring (these can be bought with a number), and the year recording its birth and parents in your pigeon record book, so you will always know it.

Pigeons lay two eggs on a nest of straw and twigs, both parents taking turns sitting for about nineteen days before the eggs hatch. Pigeons mate from when they are nine months old, and a hen will lay every month. A pair can produce nine or ten other pairs in a year, parents breeding again when their youngsters are about a fortnight old. Avoid mating from the moult in late July until next spring.

Feeding

The fancy breeds are all feather and little use for the table, but mongrel birds are better suited for that purpose. In mediæval England, large brick pigeon-cotes with fifty to one hundred netting holes used to be kept in most farmyards to provide birds for the table, when pigeon-pie was a more regular dish.

Feed your pigeons twice a day, morning and afternoon, but breeding birds should have three meals a day. Any grain will do, varied with occasional lettuce or cabbage and clover or wild seeds if you want to keep down expenses.

Small green peas are commonly given them and when they have young to feed, you should include wheat or buck wheat. Avoid giving them large seeds of anything, or crop trouble will arise. Clean water should be given daily for bathing and drinking.

The loft itself should be cleaned regularly and if it is a dove cote on the top of a post, make it so it will slide up and down, locking at the top, so that you can clean it easily.

A CLOCK SET IN WOOD

IN some bedrooms the fireplaces are built-in with small mantel ledges which barely take a photograph frame let alone a full mantel set or clock set. It is for such reason that the novel Clock Set illustrated herewith has been designed.

There are three pieces altogether, of course, and the set, though small, is new and artistic enough to warrant its construction and use on these otherwise inornate mantelshelves or even an ordinary mantelshelf, if you wish it.

The set is made throughout from $\frac{1}{4}$ in. plywood and finished in any of the bright new shades of enamel. A good alternative finish would be to coat the pieces silver or gold, then paint with clear varnish after the other has thoroughly dried.

The Statuettes

As usual, we give the outlines of the statuette figure in $\frac{1}{2}$ in. squares which must be drawn full size on paper and the lines followed faithfully with pencil (see Fig. 1). Mark out two figures on separate pieces of $\frac{1}{4}$ in. stuff by the use of black carbon paper and a hard-pointed pencil.

At the same time, strike out two base pieces as seen at Fig. 2. You will also need two plain discs 2 ins. in diam. and two further discs $2\frac{1}{2}$ ins. in diam., same being cut from $\frac{1}{4}$ in. material, preferably plywood.

Having glasspapered all the parts neat and smooth, select the statuette and glue its tenon to the upper base piece, then level the underside with a few rubs of coarse glasspaper prior to adhering the 2 in. disc underneath, following this with the $2\frac{1}{2}$ in. disc to have the "step formation" shown in the sketch.

The Clock Case

We can now proceed with the construction of the clock case. This is a very simple case, indeed, for it merely consists of a base and two sides!

It is none the less a serviceable and modern timepiece, and owing to the "plain" design, we would suggest marking out the pattern of the side (Fig. 3) and base (Fig. 4) on paper with the aid of a drawing

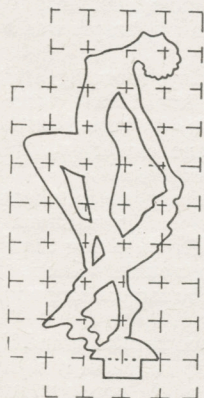


Fig. 1—Figure outline

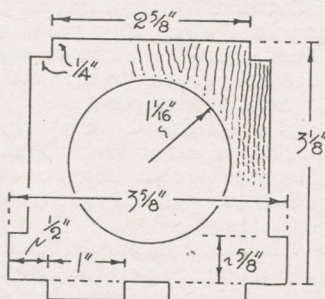
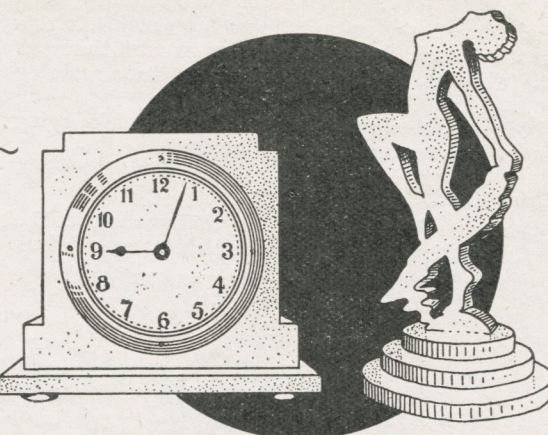


Fig. 3—The clock casing shape



board, set-square and pencil, then transfer same to $\frac{1}{4}$ in. wood by the "pin prick" method often explained by the writer.

It is a clean, accurate method of obtaining duplicates (as many as you desire) without harming the pattern. Clean the best side of the wood first with glasspaper, then set the paper pattern on top and proceed to prick all corners, points and compass centres with the steel point of the compasses.

Be careful not to shift or move the pattern while marking in this way, for on the barely discernible "dots" depends the accuracy of the design. Keep a pressure on the paper all the time. With ruler and a sharp-pointed pencil, draw lines from point to point according to the original, the clock aperture, naturally, being scribed with the compasses.

Fitting the Movement

When the parts are cut out and glasspapered, assemble with glue. Four wooden toes (No. 19) could be fixed to the corners of the base. If you finish with enamel, jade green is very popular and looks well on all three pieces.

When the paint has dried, obtain a clock movement having a $2\frac{1}{2}$ in. barrel. Hobbies Ltd. can supply such a movement (No. 5506) for 3/9. Another and better 30-hour clock is obtainable for 5/3, this being No. 5502.

MATERIALS REQUIRED

- 2 pieces plywood (figures)—5 ins. by $2\frac{1}{2}$ ins. by $\frac{1}{4}$ in. thick.
- 2 pieces ditto (top bases)—1 $\frac{1}{2}$ ins. by $1\frac{1}{2}$ ins. by $\frac{1}{4}$ in. thick.
- 2 pieces ditto (mid bases)—2 ins. by 2 ins. by $\frac{1}{4}$ in. thick.
- 2 pieces ditto (low bases)—2 ins. by $2\frac{1}{2}$ ins. by $\frac{1}{4}$ in. thick.
- 2 pieces ditto (clock casing)—3 ins. by $3\frac{1}{2}$ ins. by $\frac{1}{4}$ in. thick.
- 1 piece ditto (clock base)—4 $\frac{1}{2}$ in. by $3\frac{1}{2}$ ins. by $\frac{1}{4}$ in. thick.
- 4 wooden toes (No. 19)— $\frac{1}{2}$ in. across.
- 1 clock movement (No. 5506)— $2\frac{1}{2}$ in. barrel.

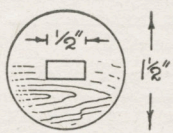


Fig. 2—The base piece for the statuette

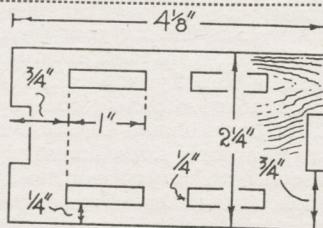
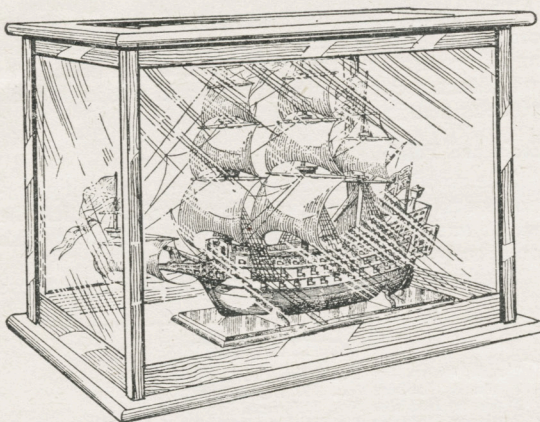


Fig. 4—Details of the clock base



WE have received a great many requests for details and instructions for making a glass showcase to contain a model galleon. Quite a number of our workers who have made up models from our design sheets have added intricate fittings and detail which warrant putting the whole under cover to keep free from dust.

Now, one of the largest of the galleons published is the "Royal Sovereign," and a case to contain this model should be 20ins. long, 15ins. high, and about 9ins. wide, these being inside dimensions.

The showcase given here therefore, is made up to these dimensions. Should one be required, however, for one of the smaller models, then the general construction shown can be adhered to, but the various rails, uprights, etc. designed to suit the new size.

Suitable Wood

Oak is the most suitable wood to use, and we have included for the main corner uprights,

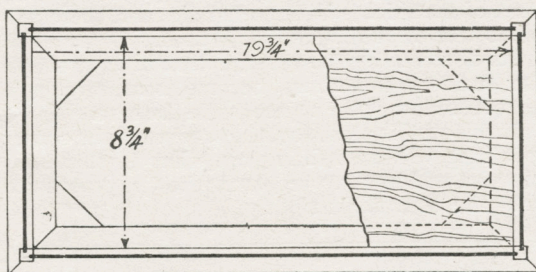


Fig. 1—A plan showing base and position of corner moulding

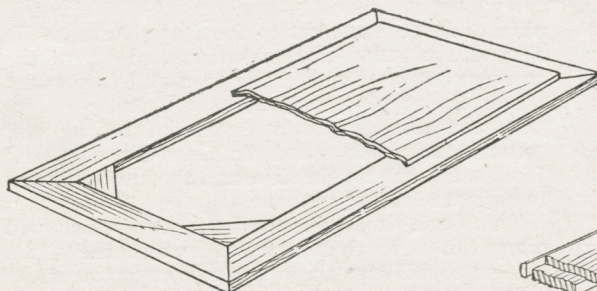


Fig. 2—How the base and framework are made

SHOWCASE FOR MODEL GALLEONS

lengths of Hobbies special grooved moulding (No. 36), to receive the glass.

In commencing to construct the case, the base should first be considered, and this is made up, as in Figs. 1 and 2, from four rails mitted together and covered with a piece of $\frac{3}{16}$ in. or $\frac{1}{4}$ in. plywood. The two long rails measure $21\frac{1}{2}$ ins. and the end rails $10\frac{1}{2}$ ins. and all are $1\frac{1}{2}$ ins. wide by $\frac{3}{4}$ ins. thick.

After cutting off the ends of the rails to an angle of 45° , they must be clamped together and glued and the odd triangular blocks left over from the cutting, glued into the angle of frame inside to strengthen it.

The size of the piece of plywood should be $19\frac{3}{4}$ ins. by $8\frac{3}{4}$ ins. and cut square and screwed to the frame with countersunk brass screws neatly run in.

The End Pillars

The plan, Fig. 1, shows the base with part of the plywood cut away and the true positions of the uprights and inner rails.

Four pieces of the grooved moulding are cut square at the ends and 15ins. long. Connecting them at the bottom and the top are $\frac{3}{16}$ in. thick rails which go into the grooves, as in the circled diagram in Fig. 3. The bottom rails are $1\frac{1}{4}$ ins. wide and the top ones 1in. wide.

Before the rails are actually glued however, the glass must be cut ready for insertion in the grooves of the moulding. It will be best to get the bottom rails glued in the grooves, then measure off for the glass, allowing perhaps a $\frac{1}{16}$ in. for clearance.

Top Rails

When the glass has been slid into place, the top

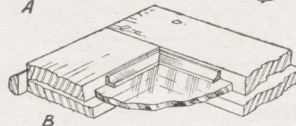


Fig. 4—How rails and glass are fitted

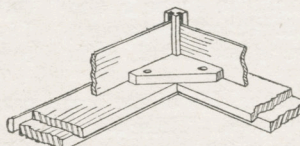


Fig. 5—Inside corner blocking piece

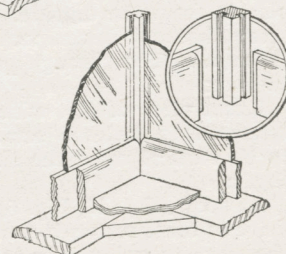


Fig. 3—A detail of corner construction

rails are put in and should finish flush with the tops of the grooved moulding.

To strengthen the bottom rails and to afford a fixing for the base, four thicker rails are glued to the bottom ones as shown in Fig. 3. These rails eventually fit down close to the edge of the plywood base. The inner side rails measure 19½ins., 1½ins. wide, and ½in. thick, and their positions are clearly indicated in the cut-away view in Fig. 3.

To make the case perfectly strong and rigid, each top corner could have an angle block cut out to fit round the moulding and to be screwed to the top rails, the screws being put in from the outside of the rails.

Cover Part

The cover for the case will have glass the same as the sides and ends, and will be made as shown in the diagrams A and B at Fig. 4. These will be two distinct frames of wood one, the lower, being of ½in. thick wood zins. wide, and the upper of ¾in. stuff 1½ins. wide.

Each will be made up separately, the rails being so marked and cut that the end rails of the top frame lap over the long rails of the lower frame just as shown at A in Fig. 4. The lapped parts should be glued and screwed, brass countersunk screws being carefully run in.

Around the outside edges of the completed frame are glued lengths of Hobbies ½in. half-round beading No. 35, the mitres at the corners being carefully marked and cut with the fretsaw.

Corner Stiffeners

To stiffen the corners four angle blocks are glued and screwed on the underside, the size of these blocks being zins. with just the corners cut away to fit round the moulding.

In Fig. 5 we give an underside view of the frame showing how the angle blocks will fit the corner moulding when the top is put on. The rebate for the glass should be carefully measured before cutting the glass which is finally dropped into place and screwed by pinning round pieces of Hobbies angle moulding No. 307. Fig. 4 shows a section through the corner of the top frame with the glass fixed.

Cinder Sifter—(Continued from opposite page)

Remove the bottom of the box and insert the sieve. Apply a little glue to the square holes in sieve and holding it in position press the pivot pins in from the outside. When the glue is dry, screw the knob in temporarily. See Fig. 5 which shows a section through part of sieve and side of the box.

Cut a piece of ½in. wide brass to shape F and screw this to the knob (removing it for the purpose) to be vertical when the sieve is horizontal, as in Fig. 2.

At spots, G & H, Fig. 6, on the side of the box drive in brass screws to act as stops. These allow the sieve to swing only to the right, a necessary precaution to prevent ashes entering the wrong

The glass to be used should not be too stout, ordinary 15oz. picture frame glass being suitable, and if possible all five pieces should be bedded in washleather cut into thin strips and put in as each piece is put in place.

Stain and Polish

The woodwork should be cleaned up with glass-paper and given a coat of oak stain after which the whole surface may be rubbed up with wax polish or it may be varnished.

The cutting list will be found useful to those

CUTTING LIST

- 2 rails 8½ins. by 1½ins. by ½in.
- 2 pieces Hobbies No. 307 moulding 18½ins.
- 2 pieces Hobbies No. 307 moulding 7½ins.
- 2 pieces Hobbies No. 35 ½in. half-round beading.
- 2 pieces Hobbies No. 35 ½in. half-round beading 22½ins. long.
- 2 pieces Hobbies No. 35 ½in. half-round beading 11½ins. long.
- Glass:—2 pieces 20ins. by 12½ins.—sides.
- 2 pieces 12½ins. by 9ins.—ends.
- 1 piece 18½ins. by 7½ins.—top.
- 4 pieces Hobbies grooved corner moulding No. 36—15ins. long.
- 2 rails 21½ins. by 1½ins. by ½in.
- 2 rails 10½ins. by 1½ins. by ½in.
- 1 piece 3/16in. plywood 19½ins. by 8½ins.
- 2 rails 20ins. by 1½ins. by 3/16in.
- 2 rails 9ins. by 1½ins. by 3/16in.
- 2 rails 20ins. by 1in. by 3/16in.
- 2 rails 9ins. by 1in. by 3/16in.
- 2 rails 21½ins. by 2ins. by ½in.
- 2 rails 6½ins. by 2ins. by ½in.
- 2 rails 18½ins. by 1½ins. by ½in.
- 2 rails 10½ins. by 1½ins. by ½in.
- 1 piece 9ins. by 2ins. by ½in.
- 2 rails 19½ins. by 1½ins. by ½in.

Base.

workers who intend making a showcase for their model of the "Royal Sovereign."

There will be some workers, no doubt who will prefer to use one of the many transparent materials now sold instead of the glass as suggested. This class of material is light to handle, and there will be no fear of breakages if it is used.

Its disadvantage however, is that in large sheets the surfaces sometimes become bent, giving a distorted view of the object inside the case.

If this stuff is used, too, the grooves of the corner moulding will need filling out, that is, thin slips of wood will have to be glued into the grooves to hold the thin sheet tightly.

compartment.

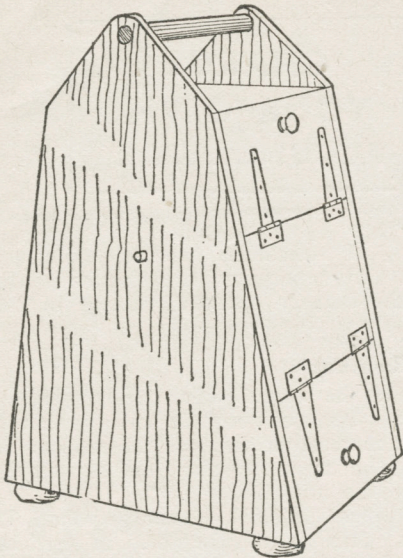
At J a metal catch is loosely pivoted. This is a piece of sheet brass, cut to the shape shown at K. Fix with a round-headed screw, and where the arrow points in Fig. 6, drive in a nail to prevent the catch dropping too low.

In use, the ash-pan is emptied into the box through the top door and the latter closed. Catch J is lifted to release the sieve and the knob agitated to assist the sifting process.

This done, it is given a half turn, which will carry the sieve right over and cause the sifted cinders to fall into the opposite compartment.

The outside of the box would look all the better for a coat of varnish or dark paint.

A HOUSEHOLD CINDER SIFTER



A useful and practical piece of carpentry for any household

A VERY useful household box is illustrated. It contains a swinging sieve so that the contents of the ash pan can be separated into ashes and cinders without mess.

Fig. 1 shows a side view, with dimensions. Deal, $\frac{3}{4}$ in. thick, is used for the sides. Cut to shape, and at A bore a $\frac{3}{4}$ in. hole for the pivot pins of the sieve. The handle is a length of in. dowel rod, glued in holes in the sides.

The wood for the ends and top is $\frac{3}{4}$ in. thickness. The fixed pieces are glued and screwed to the sides. Note that the top is bevelled to 55 degrees at the door end, the door being bevelled to suit.

The Base

The bottom, of similar stuff to the ends, is screwed in place and has its ends bevelled to the slope of the sides and is short of the full width by the thickness of the doors. At C glue across triangular fillets. The division D is nailed to bottom and sides, after the sieve is fitted inside and has its upper edge bevelled off both sides.

The addition of four bun feet to the bottom of the box is optional. They certainly improve the general appearance and help to prevent scratching the floor covering.

Slightly round off the sharp corners and fit wooden knobs to the doors. Hinge the latter with T hinges. If the doors, through not fitting tight enough, tend to swing open, simple catches could be fitted.

The Sieve

The position of the interior sieve is shown in Fig. 2. The

sides of the sieve are marked out as shown in Fig. 3, and cut to shape from $\frac{1}{4}$ in. plywood. The ends are cut from $\frac{3}{4}$ in. thick wood and are $9\frac{1}{2}$ ins. long, they are glued and nailed to the sides.

The chute boards, fixed between the sloping extensions of the side, are $\frac{3}{4}$ in. thick wood. Fix with glue and nails. In the centre of the sides of the sieve glue 2 in. dia. discs of plywood, shown dotted, and through the centre cut a $\frac{1}{2}$ in. sq. hole. The hole going through disc and side of sieve.

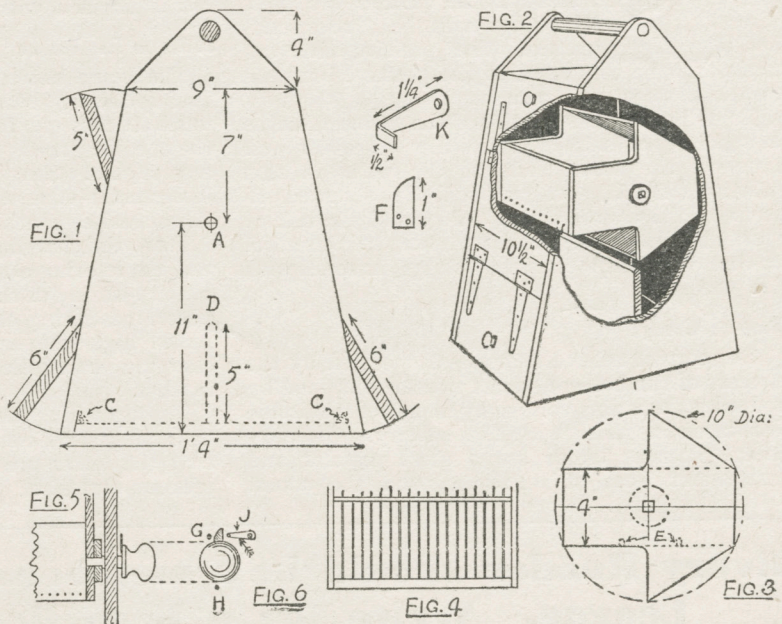
The Sifter Wire

For the wire netting, which sifts the ashes, purchase a bundle of birdcage wire already straightened. Bore a series of holes for the wire in the ends of the sieve on a line $\frac{3}{4}$ in. from the bottom. Let the holes be spaced at $\frac{3}{4}$ in. centres.

At the spots marked E, on the sieve sides, fix across strips of $\frac{1}{4}$ in. by $\frac{1}{2}$ in. wood, bored for the wires. As these holes should be in line with those already bored in the ends, it would be well to clamp ends and strips together and bored through all at one operation. The wire can then be drawn through the holes, as in plan, Fig. 4.

Dowel Pins

The pivot pins are pieces of $\frac{3}{4}$ in. dowel rod. Both have one end squared off $\frac{1}{2}$ in. deep to fit the holes in the sieve. The pivot pin for the right side should extend $\frac{1}{4}$ in. from the side and is bored in the centre to admit the screw of a 2 in. wooden knob. (Continued foot of opposite page)



The AMATEUR



ELECTRICIAN



CHARGE YOUR OWN ACCUMULATOR

It has long been a source of wonder to the writer why radio enthusiasts as a whole seem so reluctant to attend to the charging and maintenance of their own accumulators. The modern storage battery is not a mysterious and dangerous machine, but a very sane and efficient device, and we know from actual experience that the little additional care and attention given by the experimenter who does his own charging is well repaid.

The home charger effects a double saving—he cuts down charging bills and he gets months—even years—of extra life from his batteries. And it is all very simple.

Direct Current Only

All battery charging *must* be done by *direct* current. If only alternating current is available, then it must be converted to direct current by means of a rectifier or other device. A chemical rectifier (consisting of a lead rod and an aluminium plate in a solution of sulphuric acid) is quite simple to construct, but shop-made metal rectifiers are comparatively cheap nowadays and should prove more reliable than the home-made article. See earlier articles in these pages for details of tantalum rectifiers.

Correct Direction

Care must be taken to ensure that the charging current is passed through the cells in the right direction; otherwise they will be "reversed" and the plates ruined. The positive charging main *must* be connected to the positive terminal of the battery, and vice versa.

To determine the polarity of the mains, dissolve a spoonful of salt in a tumbler of water and immerse the bared ends of the wires in this solution. Bubbles of gas will be observed to form on the *negative* wire. To avoid the risk of short circuits during this experiment, it is essential to connect a lamp (of mains voltage) in series with the mains.

Rate of Charge

The correct rate of charge—as specified by the makers of the battery—must now be obtained by reducing the mains voltage by means of a suitable resistance in series with the battery. Ordinary metal filament lamps are a most popular and convenient form of resistance, and the actual

value (watts) of resistance required will vary according to the charging rate required, the voltage of the battery and the voltage of the charging supply.

The Correct Resistance

To determine the correct resistance, connect an ammeter and a bank of lamps in series with the battery, then increase or decrease the number of lamps until the requisite charging current is registered by the ammeter.

It is a good plan to "trickle" charge your L.T. accumulator. This keeps the cell in perfect condition and is an almost trouble-free arrangement.

Let us suppose that the accumulator is employed on a set taking .4 amperes and in use for five hours per day, and it is possible to leave the cell on charge (mains voltage 200) for ten hours each night. Then the correct charging resistance is calculated as follows—

$$\begin{aligned} .4 \times 5 &= 2.0 \text{ ampere hours taken out each day.} \\ 2.0 \div 10 &= .2 \text{ amperes. This is the charging} \\ &\quad \text{current to fully charge} \\ &\quad \text{the battery in 10 hours.} \end{aligned}$$

$$.2 \times 200 = 40 \text{ watts.}$$

A 40 watt lamp, therefore, should be connected in series with the accumulator and a double pole switch incorporated in the circuit so that the cell may be switched over to "charge" when the set is finished with each night.

Rules to Remember

The home battery charger should always bear the following simple rules in mind. Charge until all cells gas freely and at an even rate, and the specific gravity of the electrolyte will not rise any higher. Test the electrolyte with a good hydrometer—one with a graduated float showing the actual strengths of the acid.

Have the charging compartment well ventilated and never bring a naked flame or spark near to a battery during or shortly after charge as the gases generated during charging are very inflammable. Avoid high temperatures, and never exceed the charging rate recommended by the battery makers.

Top up with pure distilled water only, keep all vent plugs and connections tight and make sure that the latter are well coated with vaseline to prevent corrosion.

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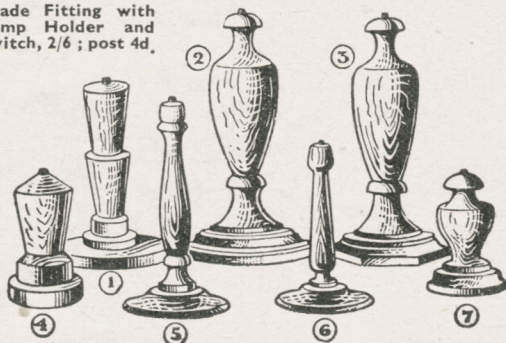
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Design
No. 2221

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4 1/8"

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CUT TWO $\frac{3}{16}$ IN.

FRONT AND BACK LEG CUT TWO $\frac{3}{16}$ IN.
AND SHAPE TO FIT FLOOR

SWITCHES
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FIX WITH ROUND-HEAD SCREWS

SIDE LEG
CUT TWO $\frac{3}{16}$ IN.

CHAMFER TO
FIT FLOOR

DOOR

SHOWING
HOW PINS
ON DOOR
ARE SHAPED
TO FIT THE
SOCKETS

PIN

FRONT
CUT ONE $\frac{3}{16}$ IN.
BACK
CUT ONE TO O

B

BACK

SIDE

SIDE

TOP CUT ONE $\frac{3}{16}$ IN.
DOTTED LINES SHOW
BACK ETC.
HOT PLATES TO BE
PAINTED ON

FRONT

A

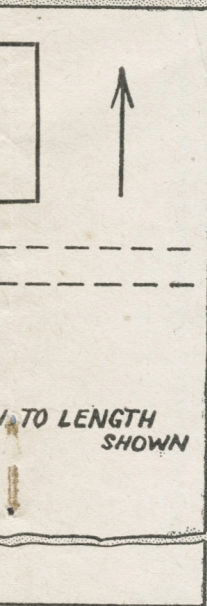
A

DETAIL OF H
FOR UPPER L

WHEN CUT



WHEN



HINGES FOR
SPLASH BACK
CUT TWO $\frac{3}{16}$ IN.



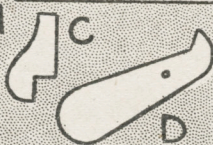
B

HINGE SOCKETS B
CUT TWO FROM
 $\frac{3}{16}$ IN.

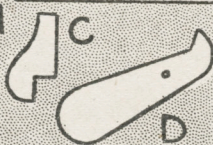


HANDLE ON TOP DOOR
CUT ONE $\frac{3}{16}$ IN.
AND SHAPE TO SECTION

HINGE SOCKETS A
CUT TWO FROM
A $\frac{3}{16}$ IN.



DOOR CATCH AND HANDLE
GLUE C TO FRONT, PIVOT D TO E
WITH ROUND-HEAD SCREW, AND
GLUE E TO DOOR



OUTLINE ONLY $\frac{3}{16}$ IN.

B

PIN



PIN

HINGE
DOOR



N SHAPED

C

PANEL FOR SWITCHES

ROUND
OFF
TO FIT
SOCKETS



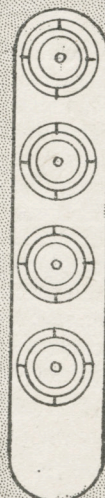
A

LINES PAINTED ON

OVEN DOOR
CUT ONE $\frac{3}{16}$ IN. AND
SHAPE TO SECTION

E

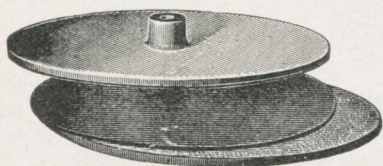
PANEL FOR SWITCHES



STICK THIS
DOWN TO FRONT
WHERE SHOWN

ACCESSORIES for your MACHINE

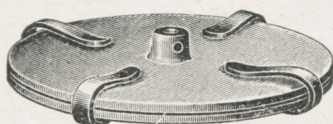
These accessories will help you to get the most out of your machine. The glasspaper discs are a most useful acquisition, enabling one to sand



SANDPAPER DISCS

Fixed in place of the balance wheel. One disc has coarse glasspaper and the other fine. The lower picture shows the two discs held by the four spring clips, whilst fresh glasspaper is being glued in position. Complete set comprising 2 Discs, 2 pieces Glasspaper, 4 Spring Clips and 1 piece of green Baize. Price 9/6, post 9d.

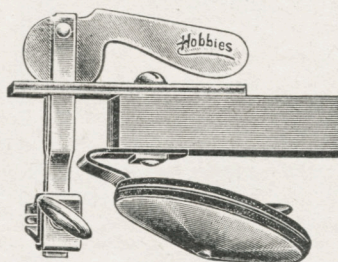
1 Disc only, 4/-. post 6d. Spring Clips, 4d. each. Glasspaper, 1½d. sheet.



down work quickly and easily. The side wings clamp on to the machine table and give additional support when cutting large boards; whilst the neat, little dust blower does a much-needed job in a simple but effective manner.

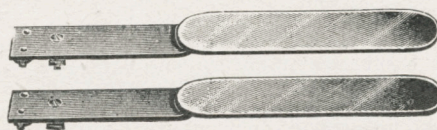
If you require other accessories or spare parts for your Hobbies machine, consult the 1938 Handbook, or write to Hobbies Limited, Dereham, about it.

You can buy these accessories from any Hobbies branch or agent or direct from HOBBIES LIMITED DEREHAM NORFOLK



DUST BLOWER

Blows away the dust around the sawblade and cutting line. It is easily fixed to the underside of the top arm and is automatic in action. Price 9d., post 2d.



SIDE WINGS

A screw adjustment brings the wings level with the surface of the table. They can be swung round towards the back of the machine when not in use, to save space in storage. Price 4/6 per pair, post 7d.

NOTE.—Side wings cannot be fitted to the Gem Machine.

A Lathe and Fretsaw

Here is a double-purpose machine which costs little more than an ordinary fretmachine. With it, the handyman can do a hundred and one jobs in wood. He can turn his own knobs, legs, feet, etc. And with the fretsawing attachment he has all the features of the standard Hobbies fretmachine... lever tension sawblade... 19ins. clearance behind saw... tilting table, etc. The lathe comes complete with two rests, three turning tools, 2in. faceplate, a spur centre, screw centre, etc. The distance between centres is 14ins. whilst the height to bed is 27ins.

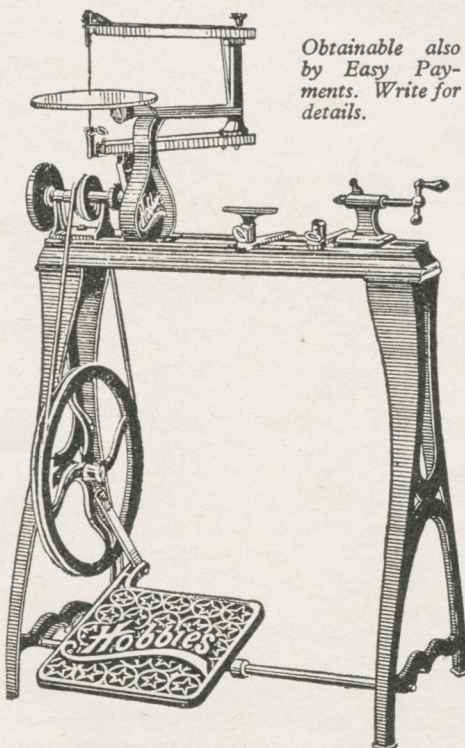
A larger lathe, 6ins. higher and 20ins. between centres costs £1 extra.

Get One from Hobbies

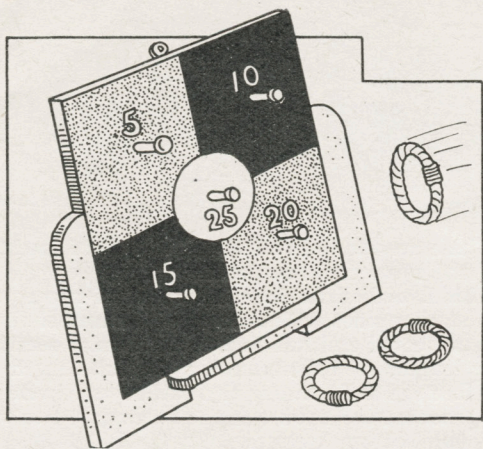
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A SIMPLE QUIT GAME

The numerals are painted white on the red sections and black on the green ones, including the white bull's-eye. The pegs could be painted, too, but this is not really essential.

The Pegs and Rings

The pegs (see Fig. 2) consist of three pieces of $\frac{3}{8}$ in. dowelling 2 ins. long and three $\frac{1}{2}$ in. diam. (No. 19) wooden toes. The toes are simply glued and affixed with a panel pin to the dowel ends.

The rings—to give a nautical touch—should be made from $\frac{1}{2}$ in. or $\frac{3}{4}$ in. thick rope and bound in circles with fine twine as suggested in the illustration. An alternative, however, is to cut them (they should be about 4 ins. in diameter) from plywood. Another idea is to use the rubber rings from the lids of pickle jars, etc.

Rope Rings

If you prefer the rope rings, but cannot obtain a length of suitable thickness, you can build rope rings up in the following manner. Obtain three 3 ft. lengths of ordinary twist cord.

Wind one length around the bottom of a large jar or mug. Slip the spirals off carefully and bind together with finer cord, doing this all round the whole strands, not just a little as in the sketch. This makes a very evenly-bound ring.

To play the game, of course, any number can participate. You can have partners, each taking their turn alternately.

NOTHING to do to pass the time? Why not make this simple quoit game? It is based on the game aboard ship and that played in the parks. As you can see by the measurements, it is a small affair—and one which can either be set up on a slant on the floor or hung up on a wall. It is thus ideal for indoor and outdoor use.

The board is fitted with a special support which fits temporarily between the feet of same. A brass hanger is screwed to the back so the whole will be flat and compact when not in use. Instead of hooks for the rings, small dowel pegs are adopted. These, too, may be fitted loosely in the board.

Cutting the Board

The board should be cut from $\frac{3}{4}$ in. birch plywood, including the support piece, both of which are detailed at Figs. 1 and 2. Mark out the board exactly as shown, then cut to shape with a panel saw and a keyhole saw. The last-mentioned is suggested in view of rounding the corners shown and also in order to help in shaping the feet.

Having cut out the board and smoothed the edges satisfactorily, bore five $\frac{3}{8}$ in. holes in the centre of the squares and "bull" circle. The support should be tried in position and made sufficiently free (not too much) in respect to the coats of enamel which can now be applied.

The Colouring

To do so properly, first give the board and support one coat of white paint (or enamel) all over. The face of the board is then divided up with pencil and ruler as in Fig. 1 again. Coat two squares with green and the other two with a contrasting colour, such as red.

MATERIALS REQUIRED

- 1 piece birch plywood, 14 ins. by 15 ins. by $\frac{3}{4}$ in. thick.
- 1 piece ditto, 8 ins. by 7 ins. by $\frac{1}{4}$ in. thick.
- 1 piece dowelling, 6 ins. by $\frac{3}{8}$ in. diam.
- 3 wooden (No. 19) toes. $\frac{1}{2}$ in. diam.
- 1 brass hanger (No. 6176)

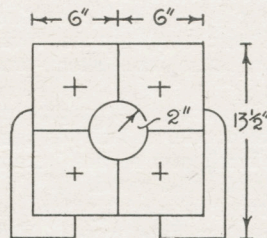


Fig. 1—How to mark out the board

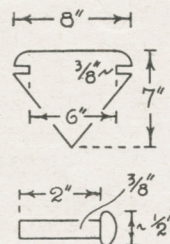


Fig. 2—The back support and a peg

In the ordinary quoit game, a boundary line is usually chalked across the ground a short distance from the board. Any thrown rings falling short of the line forfeits any other in that player's hand. He must await his turn again; what he has scored does not count for that throw only.

**Be sure to enter our Photographic Competition
Full particulars and Prize List next week**

NOTES FOR THE BEGINNER

Part 2

MODEL AIRCRAFT TOPICS

YOU will have gathered something of the interest and intricacies of model aeroplane building and flying from our previous article.

You will require at first (and maybe these will suffice for the whole of your days as an aeromodellist), a safety razor blade, pocket-knife, wire cutting and bending pliers, soldering iron, glass-paper and PATIENCE.

Don't Rush

The tendency of beginners in all handicrafts is to start carefully, paying strict attention to the smallest detail and gradually be overcome with eagerness to see the finished article.

Details are overlooked and makeshift parts are incorporated to the detriment of the machine. At trial time the whole job is a failure and the builder is cast into the deepest despair, probably throwing up the whole game in disgust as beyond his powers. What a pity that for a few hours saved he has lost days and weeks of enjoyment from a precision-built aeroplane.

Three Kinds of Balsa

How about the building of your first model? There are three main kinds of balsa wood, apart from size and they are hard, medium and soft. As you would imagine, these are also in order of weight as the hard balsa is the heaviest and soft balsa the lightest.

In the past it was deemed advisable, even after balsa wood had more or less come into its own as the medium for model planes, for the novice's machine to be built of birch and spruce, owing no doubt to their toughness and shock-proof properties.

It has been found however, that a properly designed and constructed model of balsa is equal to, if not better than, birch and spruce because of the natural resiliency of balsa wood.

So we find that all types of model planes are now constructed of this ultra light wood. However, it is still advisable to use the hard balsa for the newcomer's machine. Apart from the greater strength, better cutting properties are found and cleaner ends to longerons, struts and spars are simple to make.

Choice of Model

Also, the simpler form of construction requires strength that can hardly be found in the other kinds of balsa without complicating the design of construction.

For the choice of aeroplane it is left to the individual's own idea of his capabilities, but we would advise the simplest form of fuselage and wing.

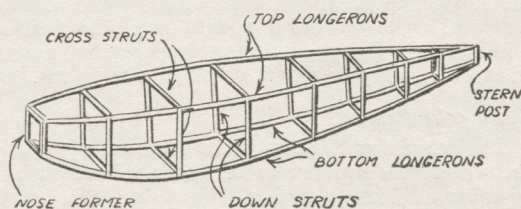
These are the flat or slab-sided type of fuselage and the equal chord or parallel wing.

This flat-sided fuselage is formed of two equal and similar sides with a top and bottom similar, but not equal and has thus a rectangular section. The lengths of balsa running the full length of the fuselage and forming the outline as it were of the machine are known as the longerons, two top and two bottom longerons.

The Struts

The cross-pieces and down pieces or uprights, are known respectively as the cross struts and down struts. Those forming the front are known as the nose former and the rear struts are usually joined together and known as the stern post.

If you will study the simple outline drawing accompanying this article, you will make yourself



The general parts of a model plane

familiar with the parts of the fuselage and will then know what the other fellow is talking about.

To finish the fuselage we have to arrange for the undercarriage or, as now termed, the undercart, as well as the tail skid or wheel.

Kinds of Undercarriage

Undercarriages are of divers designs and materials, but all have the same services to render the machine.

Firstly, they must be sufficiently stable to allow an easy take-off for the plane from whatever surface provided—usually wood or linoleum.

Secondly, and probably of much more importance, they must be strong enough in shock-proof properties to withstand ordinary and crash landings.

In simple designs the undercarriage is usually formed of piano-wire, around eighteen gauge. This wire is ideal for the job and is quite cheap and easily obtained. The wheels of the undercarriage are of balsa or celluloid and are stocked at model aero stores ready-made.

Tail Skid

The tail skid is for similar purpose but mainly to cause the least possible friction for the take-off.

(To be Continued)



FRETWORK

A further article of hints and tips to all using fretwork tools. Back numbers of earlier articles are still obtainable

ONE of the points which always troubles the beginner is how to finish his work, and a few notes on the subject should therefore be of interest to all. Indeed, this is one of the matters which is too often given only a cursory thought.

Whereas, of course, it is actually the finishing of the article which can make all the difference to a good or ordinary result. It always seems such a pity to spend perhaps hours over the work of cutting and more hours over fitting an article up, then to leave it at that.

How much better to give the same amount of time and thought to the most suitable way in which it can be really finished off to make it equal to any shop article or other piece of furniture in your home.

Points to Decide

You would not, for instance, expect to see a chair without its polished surface or a chest of drawers with the paint splashed over the handles or the mirror. It is equally essential, therefore, in undertaking any work to consider how you are going to finish it off when the actual cutting and construction are completed.

There are several ways of doing it, and each may appeal to the individual taste or be more suitable for the purpose to which it is to be put.

Generally speaking, there are three methods. The work can be left with the wood in its natural state, it can be stained and polished, or it can be merely stained and given a dull finish. There are actually several methods of bringing each of these types about, and the processes should be thoroughly studied before the worker undertakes them.

First Experiments

Indeed, we should strongly recommend that if you have not undertaken any of these particular methods before, it is worth while practising on an odd piece or two of wood. Because obviously the second or third time of doing anything becomes more simple and more satisfactory.

Let us take first the question of leaving fretwork in its natural state. This largely applies when whitewood is used, because there is really no satisfactory covering which the amateur can use to make a satisfactory job of it and yet leave the wood with its natural surface.

The only possibility is, of course, that if the

Methods of Finishing Work

article is to be handled at all it is apt to become dirty and greasy with finger marks.

A method of overcoming this is to coat the whole thing with clear varnish or clear polish. Although both of these are called "clear" they are really not colourless and in consequence the wood becomes a dirty creamy shade. If you are using ordinary wood, it is a simple matter to stain and polish the work.

Matched Boards

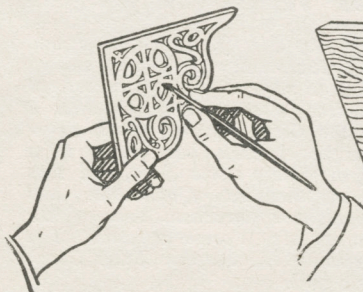
In ordinary carpentry or anywhere in which deal or similar soft wood is used, the further operation of filling is necessary, but in most fretwork there is no occasion for this at all.

This brings us to the point that if you are making your article from various boards, see that they are all the same colour. Because, after all, all mahogany is not the same shade, and if you are not careful you will find half a dozen different types in possibly as many different pieces of wood.

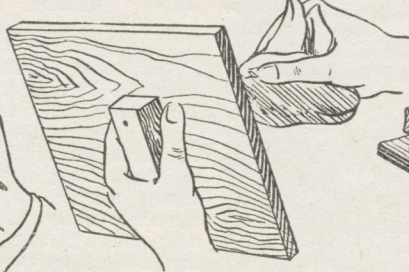
Water or Spirit Staining

The question of staining, however, largely overcomes this variety of texture and colour because you can quite easily stain the work down to get it all the same shade.

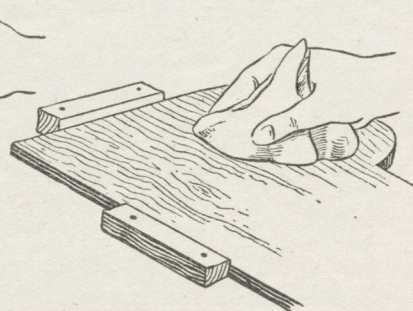
These stains, too, are applicable to the particular finish desired, and there is oak stain and mahogany



Applying varnish or polish to the fretted edges



Make a temporary handle to hold the wood



Blocks of wood nailed to the bench as temporary stops

stain, and another shade for walnut or rosewood. All of these will produce the particular colour required providing the wood beneath is equally suitable.

Obviously it is impossible to colour a piece of beech with oak stain then call it real oak. The grain of the beech being totally different will look absurd in the colouring of the oak dye.

Types of Stain

If you have whitewood this usually has a clear almost grainless surface, and here again you cannot imitate mahogany or oak satisfactorily. You can, of course, get the colour but certainly not the beauty of the grain found in the actual wood.

The stain can be applied by means of water or spirit dyes. Water stain is apt to raise the grain, whereas spirit dyes will soak into the wood and dry almost as rapidly as it is applied. Do not apply either of them with a brush where you have a fairly large surface; use a rag soaked with the liquid.

Treat the Edges

In the case of frets, you must stain the edges of the wood equally with the surface, and it must be applied carefully with a fine brush. Use the brush from the front touching the edges of the frets carefully. In this way if any drags off the brush it will disappear on the back surface of the wood.

Only a small quantity of stain is required and keep it evenly to the same shade right through. Be sure, therefore, if you are mixing your own stains and powder, to make up enough for the whole job first. If you have to keep mixing up in small quantities it is very difficult to get the same amount and so the finished colours will vary.

In the case of oak you have varying shades from quite light oak to very dark Jacobean. These shades of stain are obtainable ready mixed, or you can get a light oak and apply three or four coats until you darken it down sufficiently. That is probably the better way than getting a dark stain first and finding it has gone a deeper colour than you desire. In every case you should try

the actual stain out on a piece of similar wood to see it is the colour you want.

If the wood has to be filled to close up the porous grain, this job is undertaken next. The woodfiller is a putty-like substance which can be thinned down with turps almost to a creamy consistency then rubbed well into the surface of the wood across the grain.

Wipe away the superfluous powder then apply your polish to obtain the finished surface or another coat of stain if you require it. A rubbing of glass-paper is necessary between these operations, but a very fine grade should be used then only lightly so as not to scratch the surface.

Polishing

The operation of polishing can be next undertaken, and if the work contains a lot of frets it can be applied with a rag, being careful not to catch up any of the frets. Have your polishing bob quite tight and use it according to the directions.

The process is shown clearly in the Hobbies Handbook, or instructions are given with the special amateur's Lightning Polish.

Here again the edges are treated with a very fine brush. Polish will soak in on these edges more than on the actual surface so that a second or possibly a third coat will have to be put on.

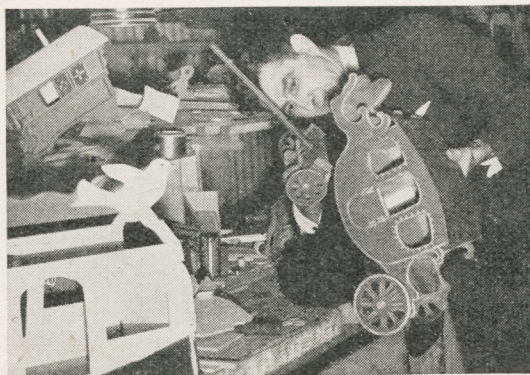
Do take time in its application, however, and prevent handling the work as much as possible with the fingers. A little screw or a handy knob can be driven into the work by which to hold it.

A Wax Finish

In the case of some wood a nice surface is obtainable by treating the boards with wax instead of polish. For this Waxine is very suitable, and it is applied over the stain being rubbed on with a rag as one would apply floor polish.

This is more suitable for complete boards rather than fretted ones, because it is almost impossible to get the dull semi-polished surface to the fretted edges. The dull polish on the surface is obtained by constant rubbing as at first no polish at all is procured.

This type of finish, by the way, is particularly



What Toy Making can lead to !

SEVEN years ago, Mr. J. H. Wooton and his brother, of Rickmansworth (Herts) started with their fretsaw to make a few toys to sell to local shops. It was a spare time job after a day's work in the City, but they were clever and keen. Now the business has grown to a large workshop, machinery worth £150, and toys turned out by the thousand. Queen Mary and the Princess Royal have purchased some of the toys. Here you see Mr. Wooton at work on a model coach something like our own Stage Coach Design of a little while ago.

suitable for satin walnut and oak, but does not always look well in the other boards.

Another type of finish can also be given in the case of oak, and this is to fumigate it with ammonia. This is a very satisfactory means of obtaining a standard colour right through because actually the article is put into an airtight chamber and the fumes of ammonia are allowed to discolour or stain the wood thoroughly. Thus, all edges, all sides, back and front, and all parts exposed to the fumes are treated.

A Fumigating Chest

It may be a bit of a job at first to rig up a satisfactory container for the work, but when this has been done once, it can be used over and over again for similar operations.

A large tea chest is quite suitable providing it is fitted with a door totally enclosing one end or one side. The tea chest must be large enough to hold the whole of the work, and two ledges are fitted across the bottom for it to stand upon. A saucer with a small amount of liquid ammonia is stood inside the chest, possibly on a shelf, then

the door closed and the whole thing sealed up.

Gummed paper can be easily pasted over the joint of the door to prevent the fumes escaping. Experiment will tell you exactly how long to keep the wood in to get it down to the shade you require, but a good idea also is to fit in a piece of glass on one side so you can see how things are going on inside.

Linseed Oil for Darkening

There is, too, the ordinary method of darkening oak by using raw linseed oil. Here again it is a question of rubbing the oil well into the wood with a rag and gradually darkening its surface all over. Do not apply the oil too thickly and rub it right into the pores of the boards to prevent it being tacky.

With these few notes the worker may be able to overcome the question of how to finish his work, but we shall be pleased to help on any further points or to refer him to other and more detailed articles on any particular aspect of this subject.

CHEMISTRY CROSSWORD!



THOSE interested in Chemistry should find it a comparatively simple task to solve the puzzle provided herewith. Naturally, in compiling the square, we had to resort to a few extremely difficult clue words to get the rest worked in neatly. The clues, however, are so coined that the average enthusiast should be conversant with the correct answers.

Those who are not, of course, should work out all the abbreviations and simple answers first, then refer to a dictionary to find the correct spelling of some of the "jaw-breakers" which they will have partly written in the spaces. As usual, you should try to solve the puzzle inside 30 minutes. No prizes for correct solutions are offered, remember.

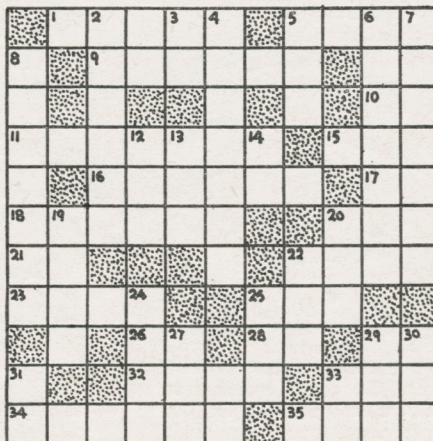
Next week's issue will contain correctly filled in square for checking purposes. A further puzzle will appear.

CLUES DOWN

2. A bulb-like glass vessel used for distillation of liquids, etc.
3. The opposite of "yes."
4. One of the fundamental parts of which anything is composed.
5. Young enthusiasts can purchase a chemistry one quite cheaply.
6. Pure spirits of wine.
7. A greyish-white metallic element belonging to the platinum group.
8. A pungent volatile gas, powerfully alkaline, obtained from sal ammoniac.
12. We get this black substance from coal.
13. Behead and curtail "cocoa"
14. "My" reversed.
19. To be capable.
20. Short for "laboratory."
22. Slang for "business."
24. A young, unmarried girl.
25. A long fur tippet worn by ladies round their necks.
27. An enemy.
29. A substance in the form of air obtained from coal.
30. Optical (abbr.).
31. First two letters of the alphabet.
33. Tellurium (abbr.).

CLUES ACROSS

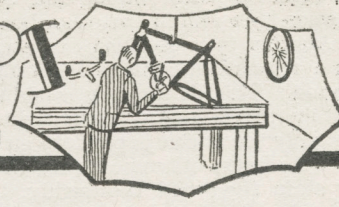
1. Water strongly impregnated with salt resembles this.
5. To burn or scorch the flesh.
9. To turn out something.
10. Short for "company."
11. Dissection of muscles.
15. Glass tubing easily bent over a naked flame.
16. Pertaining to or obtained from grape-juice.
17. We shout this to attract attention.
18. Native sesquicarbonate of soda.
20. "Loud" curtailed.
21. Abbreviation of the Latin word "ibidem."
22. The fragrant juice, sap or gum of certain trees or plants.
23. A name given to double salts of aluminium and potassium.
25. A cloth put under a child's chin to keep the front of the clothes clean.
26. On the supposition that.
28. Short for "ounce."
29. To move away.
32. Carbonate or bicarbonate of sodium in the crystalline form.
33. A faucet.
34. Name of burner or lamp in which air is mingled with gas.
35. To prove by experiment.





HINTS & TIPS

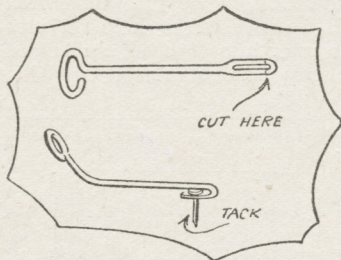
WORTH KNOWING



For original Tips published the sender will receive a Hobbies Handy Propelling Pencil. We cannot acknowledge all those received, or guarantee to print them. Send to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

Small Nail Holder

HERE is a useful gadget when driving small tacks in awkward places, and also to prevent hitting one's fingers whilst performing. Get a sardine tin



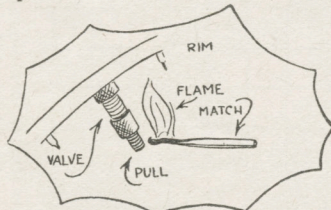
opener and cut off the end as seen in Fig. 1. Bend it over to enable a tack to be slipped between prongs shown in Fig. 2. Then bend the end to allow a better hold (Fig. 3), but remove holder before driving tack all the way.—(A.K.)

A Brace Screwdriver

I THINK this hint is useful to anyone who has lost the handle of their screwdriver. Instead of using a drill in a brace fit the top of the screwdriver blade in and you will find it a very useful thing for putting screws into anything.—(R.T.S.)

A Sticky Valve

IF you have a valve in your cycle tyre which has stuck, do not pull it out roughly or you will split it. Hold a lighted match



near enough to warm it and you will find the valve comes out quite willingly. Do not, of course, heat the valve up too much or let the flame get near the rubber. Pull the valve away gently and repair.—(W.F.C.)

Hansom Cab Wheels

HERE is a tip for any reader who is making the Hansom Cab model. Cut the wheels slightly smaller than shown on the design so that when the 1/32in. overlays are glued on they will form a shallow groove round the wheel. In this glue rubber-covered wire. It makes a better tyre than painting.—(R.F.)

Furniture Polish

RUB a little vinegar over a polished table, then rub olive oil well into the surface, working the way of the grain. This gives the table a high polish and removes marks left by hot dishes.—(S.C.)

Seed Trays

IN most greenhouses propagating boxes are often required and a number of match box trays make good ones as they take up such a small space. When the plants are ready for planting out it is an easy matter to smash the tray and so all roots are kept intact.—(G.E.W.)

Sink Pipe Cleaner

IF the sink becomes blocked up with tea leaves, etc., get a curtain spring with a hook on the end and push this down the sink to clean.—(A.C.)

Peg Clips

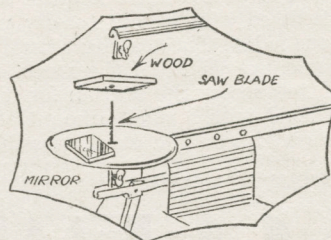
I HAVE found the following tip for holding two small pieces of fretwork together. As soon as you glue them together, get three or four ordinary clothes pegs and place them as required. I find this very handy as it wedges the parts quite firm.—(G.E.H.)

Bench Pencil Holder

A GOOD place in which to keep your carpenter's pencil is to bore a hole in your bench with a brace and bit, you will find that this is very useful as pencils are usually lost when wanted. Bore the hole deep enough for the pencil to stand upright when not in use.—(G.R.S.)

Mirror Aid

IN using a fretmachine I sometimes find difficulty in locating the hole with the blade. After



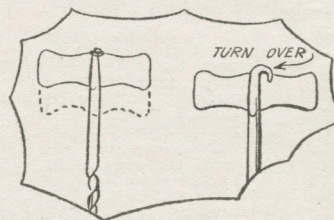
experimenting, I have discovered that by placing a small mirror on the table, the reflection shines upwards on to the wood, and the solution is simple.—(J.H.)

A Small Mallet

THE top cut off a leg (i.e. No. 516B) can be made into a small mallet used for tapping fretwork joints together. If done in this way, drill a hole in one side and glue in a piece of dowelling to form the handle.—(R.A.E.S.)

Handle Fixing

I AM sending you a hint well worth knowing. If your gimlet handle works loose, the handle



should be driven lower down the shaft, the prong should then be hammered out, bent over and driven into the top of the handle as illustrated.—(R.D.)

Paint Preserver

WHEN you have finished with your paint, pour a drop of water on the top to prevent a skin forming. When coming to use, pour the water off. The paint will be as good as ever.—(N.W.)

The EDITOR'S NOTES



THIS week we have the second instalment of the Doll's Kitchen series which we are publishing in part form from time to time. The Electric Cooker shown is a typical modern accessory to any house and the actual model would be a delight for any kiddie to play with. It is made in quite small pieces of wood by simple use of a fretsaw and finished off realistically with a mottled effect by means of the suitable enamel we supply in tins at 2½d. each. When the series is complete, you will have everything for setting out a full model kitchen—with dresser, table, washing machine, etc., and even a walled background to show them off better. We have already had details of the tiny Ironing Board (April 9) and the Kitchen Sink (April 30).

MANY readers who have made up our Model Galleons will welcome the opportunity to make a showcase in which the ship can be kept free from dust and interfering fingers. A simply constructed glass case can be made from the details on page 151. Remember to purchase very light glass or the whole thing will be weighty. Or, of course, if you can get some of the modern transparent composition material, that will serve the purpose excellently.

THE Maidstone Model Railway Club held a very interesting Exhibition of Models recently, with entries which came from all over Kent. A pity it was not a little later or readers in the district would have been able to carry off a prize with our old-time Locomotive Model "The Comet" which was provided with last week's issue.

MAY I draw attention to the Note on our Stamp page—where the author mentions the question of valuing stamps? I help everyone as much as I can and can usually give sensible and practical answers on all manner of subjects. It is really impossible, however, for either my expert or myself to state values of stamps sent in. That is really not our job and little as I like it, such queries cannot be dealt with.

I WAS delighted to find so many entries in the Picture Puzzle Competition which closed last month. It was an ingenious and fascinating piece of work, but evidently readers got down to it properly and in consequence hundreds of entries were received. But, alas, nobody got the correct clues to all 15 pictures according to my list—the nearest being one wrong. That set of pictures was sent in by H. Kirton of Hutton Street, Hulme, Manchester, accordingly the prize, an A1 Machine, has been dispatched to him. For second place there were a number with only two wrong, so neatness had to count. The second prize was thus awarded to Douglas W. Stott of Union Street, Aberdeen. The correct solutions cannot be given, of course, because the Overseas Section has not yet closed.

NO doubt many readers interested in aircraft will take the opportunity of seeing some real machines in use at the various R.A.F. Aerodromes which will be open to the public on May 28th. There are 90 stations in different parts of the country and some exciting and interesting events are being staged. If there is a 'drome in your district a visit is well worth while.

I MUST just include this extract from a recent letter for the sake of those who want to know if you can make the use of the fretsaw profitable. The note is from a reader in Derby, who says some very nice things about the Weekly and adds "—I have been out of work for 12 months owing to illness and was utterly fed up with

nothing to do to kill the time. About two months ago I picked a copy of Hobbies up on a bookstall and was at once struck with the idea to make things and sell them in order to help expenses. Well, up to now, I can reckon up to £5 10s. od. received for the things made and sold. And no longer am I miserable and fed up, as I can always rely on your magazine to find me something to do. I have just recently sold a model of your Country Inn for 25/- and if I had gone to the right people, I could have got £4."

The Editor



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The advertisements are inserted at the rate of 2d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Order and Stamps must accompany the order. They will be inserted in the earliest issue. To sell anything except fretwork goods or those shown in Hobbies Handbook. Orders can be sent either to Hobbies Weekly, Advertisement Dept. 30/32 Ludgate Hill, London, E.C.4, or Dereham, Norfolk.

100 STAMPS, all different, free to approval applicants sending 2d. postage.—**Errington Macquire (O)**, 51 Atkins Road, London, S.W. 12.

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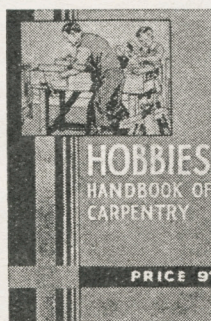
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STAMP COLLECTOR'S CORNER

NOTES AND NEW ISSUES

PLEASE notice this week we start off by reversing the usual title. The reason for this is that first there is an important note to make. Will you all please remember yourselves and tell any friend who may think that he has a good stamp that we cannot value a stamp for anyone!

The point that must be remembered is that a catalogue gives the price at which a firm is willing to supply a stamp; not the price which they will pay for the same specimen.

Moreover, firms which deal in postage stamps do not buy common stamps by one's or two's, they buy any they want by the hundred. So do not think that a stamp catalogued at say 5/- will

think of the Ceylon stamp which shows the tapping of rubber when they see the separate illustration. This is from British Honduras, which is a very long way away from the former island.

Yet it seems as though the chicle is obtained in a very similar way to the rubber. We mentioned, you remember, in the last notes, that chicle was the basis of chewing gum. Now we see clearly the process which has to be gone through in order to have this—shall we call it a sweetmeat?

The new stamps from Gibraltar make a very fine addition to the pictorial issues. The halfpenny value is a small-sized stamp, or rather a usual-sized, but the re-

Then in 1704-5 it was unsuccessfully besieged by the Spaniards and the French, and again in 1726 by the Spaniards. From June 21st, 1779 to Sept. 3rd, 1783 it underwent the longest siege in its history.

St. Vincent has now turned over to a pictorial issue. There are five different designs for a set of eleven, but for seven they have a modified type of badge of the colony stamp. The others show Kingston and Fort Charlotte, Young's Island, Bathing Beach, and Victoria Park at Kingston.

Of the Foreign countries which have issued new stamps lately we must mention the American States. For instance, this month Ecuador has produced a number of stamps in celebration of the 150th anniversary of the U.S.A. Constitution, and so have other countries.

Greece has two more of the Wedding stamps, the same design as we illustrated some time ago. Panama goes in for sport in a set of five for the Central American and Caribbean Olympic Games—basket ball, baseball, swimming, boxing and football are all shown.

Roumania, in celebration of the Balkan Entente, shows the emblems of Roumania, Greece, Turkey and Jugoslavia. Greece also has the same design except that, of course, their own emblem comes in front.

A very picturesque mountain is shown on the Congo Belge (Belgium Congo) issue for National Parks—Mt. Karisimbi. Other 'views' in the same set are Bamboo Canes, River Suza, River Rutshuru, and a forest.

Bulgaria illustrates one of the lesser known industries when she shows a rose and a bottle of scent. Bulgaria is one of the foremost countries for the production of that most expensive scent—Attar of Roses.



The Koala of Australia

A picture of Gibraltar from the North

One of the "Pillars of Hercules"—Europa Point

be accepted by a firm for even a 1/-! If you have fifty of such stamps then it might be worth while asking what they will give. Hobbies Weekly cannot say what this would be.

Now for the New Issues. Look at the first illustration. One cannot help wishing that instead of a postage stamp it was a poster. The little Koala or native bear, is such a pretty little fellow that one wants a bigger view of him.

As one can imagine from the stamp it is a native of Australia, and is a marsupial, that is a pouched animal. It lives entirely in the trees and its food is eucalyptus leaves. It is about two feet in length, and is an ashy grey colour. It is an expert climber and at one time was very common in Eastern Australia, but now it is less so because illness and the furrier have taken their toll.

Those readers who like to compare stamps from one country with another will immediately

mainder are larger.

The penny and the threehalf-penny are of the same design as the 1931 issue, but the two penny and the threepenny are different and are here illustrated. The former is taken from the north side (that is opposite to the 1931 issue), and the latter is the extreme end of the peninsular.

It obtained its name from a Moor who seized it in A.D. 711 (Gebel-al-Tarik). It has been a British Possession since its capture by Sir George Rooke on July 24th, 1704. At the southern end it is 1,439ft. high, and the entire length is 2½ miles, while it is only ¾ mile wide.

Europa Pt. together with Ceuta (in Africa and belonging to Spain) formed the 'pillars of Hercules' of the ancients. A curious cinnamon coloured ape (taillless) is still found on the sides of the mountain.

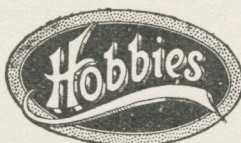
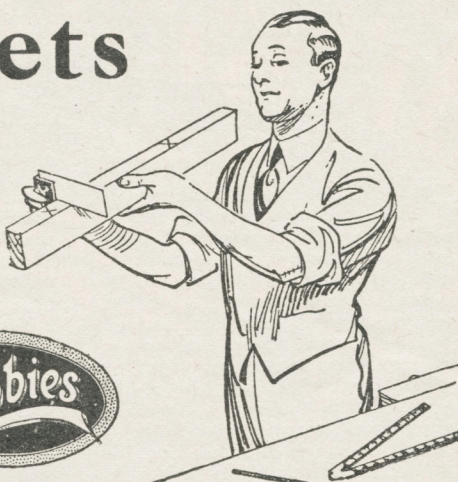
Gibraltar has seen three sieges. First the one which resulted in its capture by Sir George Rooke.



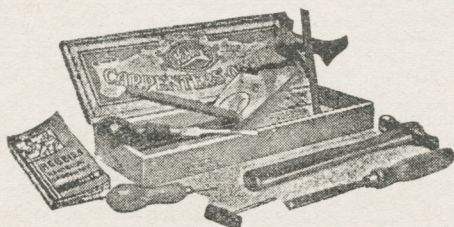
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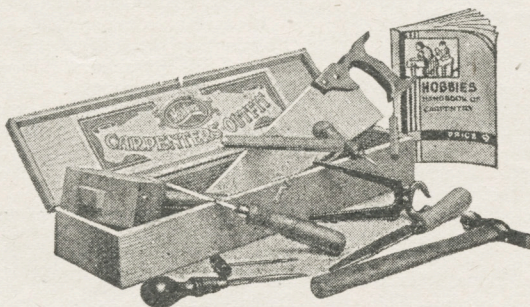


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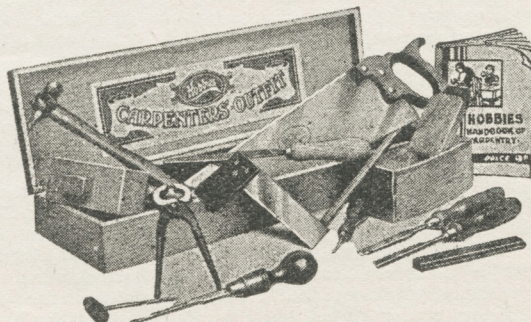
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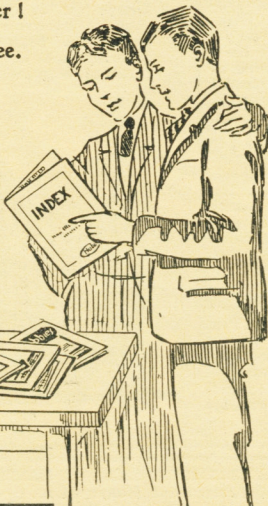
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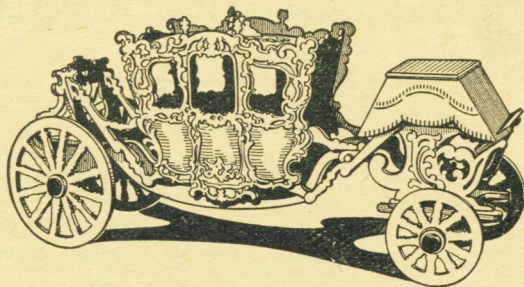
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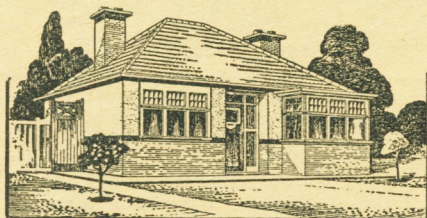
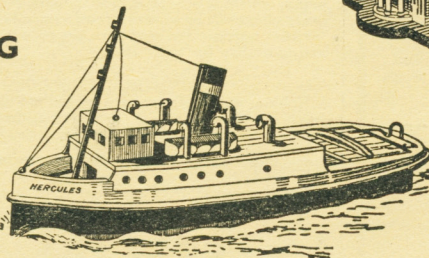


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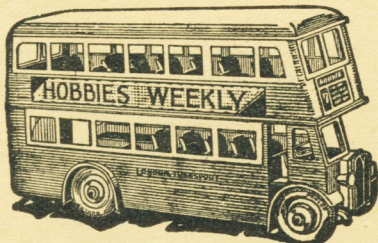
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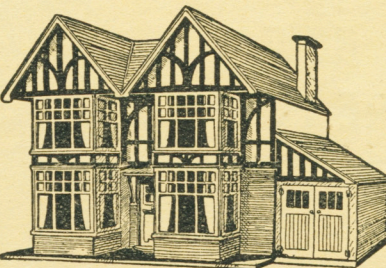


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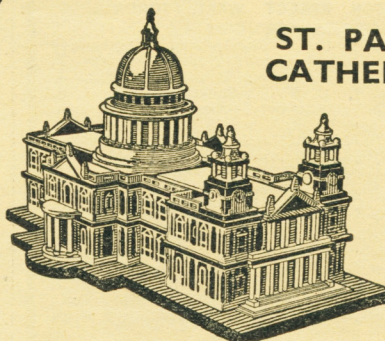
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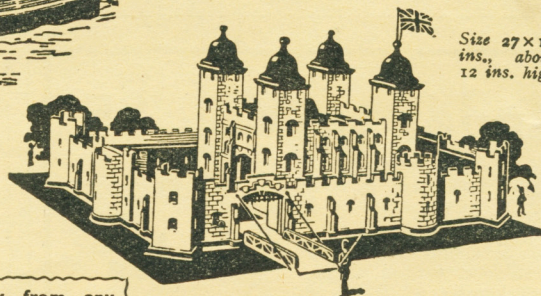


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